(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification[7]: **H04B 7/26,** H04Q 7/30

(21) International Application Number:
PCT/EP2003/050881

(22) International Filing Date:
24 November 2003 (24.11.2003)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): TELE-FONAKTIEBOLAGET LM ERICSSON (publ) [SE/SE]; S-164 83 Stockholm (SE).
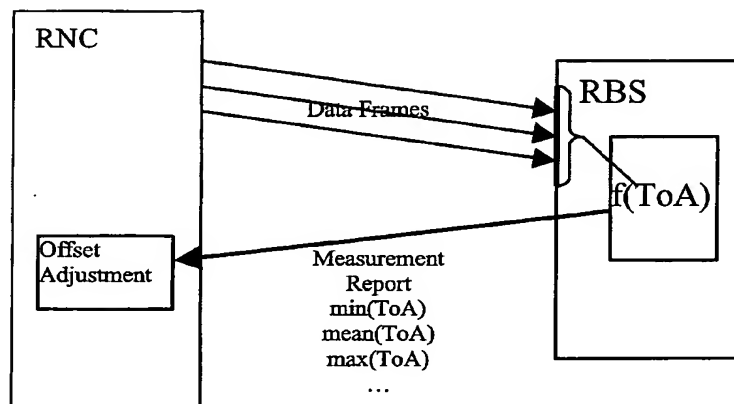
(72) Inventors; and
(75) Inventors/Applicants (for US only): SÅGFORS, Mats, Fredrik [FI/FI]; Ravalsvägen 8C 13, FIN-02400 Kyrkslätt (FI). PEISA, Janne, Johannes [FI/FI]; Metsäpirtintie 12D17, FIN-02130 Espoo (FI).

(74) Agent: LIND, Robert; Marks & Clerk, 4220 Nash Court, Oxford Business Park South, Oxford OX4 2RU (GB).

[Continued on next page]

(54) Title: FRAME SYNCHRONISATION IN A RADIO ACCESS NETWORK

(57) Abstract: A method of optimizing the timing offsets with which data frames are transmitted over the Iur/Iub interfaces of a UMTS Terrestrial Radio Access Network, UTRAN. The method comprises, for a given Iur/Iub interface or set of Iur/Iub interfaces over which identical user plane data is to be sent, defining a duration of a data frame receiving window for use by the receiving node(s), transmitting data frames from a sending node with an initial timing offset sufficient to ensure a likelihood that the frames will be received at the or each receiving node within the defined receiving window, reducing the timing offset at the sending node in a stepwise manner, and adjusting the timing offset at the sending node in response to the receipt of late Time of Arrival error reports at the sending node. In a second embodiment, the frame synchronisation of frames corresponding to speech services and data services is carried out by delaying the frames corresponding to speech services a fixed delay and the frames corresponding to data services a variable delay based on a received time of arrival feedback.

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*